

CLAIMS

1. A data updating system, comprising:

a plurality of user terminals; and

a server for controlling a shared data among users;

wherein the plurality of user terminals and the server include clock modules for keeping a time synchronized between the user terminal and the server;

wherein the user terminal includes an update request transmission processing unit for transmitting a shared data update request to the server by attaching a time obtained from the clock module as a data update issuing time when representing a shared data updating, and for repeatedly transmitting the shared data update request in keeping the data update issuance time unchanged until the shared data update request is received by the server; and

wherein the server includes a shared data control module for deciding an updating order of the shared data update request based on an attached data update issuing time of the shared data update request received from the user terminal.

2. The data updating system according to claim 1, wherein the shared data control module includes an update rule control unit for setting an update request reception period, and an update request control unit for receiving the shared

data update request received within the update request reception period.

3. The data updating system according to claim 2, wherein
5 the update rule control unit further sets a valid update request issuance period which is included in the update request reception period;

wherein the update request control unit receives a shared
10 data update request for which a data update request issuance period of the shared data update request received is within the valid update request issuance period.

4. The data updating system according to claim 3, wherein
15 the update data request transmission processing unit transmits the shared data update request including a data updating condition to the server;

wherein the shared data control module includes a data
20 updating unit for checking the data updating condition included in the shared data update request in an order of data update request issuance time after the update request reception period expires, deciding a shared data update value based on the shared data update request when the update condition is met, and updating the shared data to the shared data updating value.

5. The data updating system according to claim 4, wherein the data updating unit checks the data updating condition included in the shared data update request which is already received within the valid update request issuance period in an order of the update request issuing time, and decides a shared data update predicting value based on the shared data update request when the update condition is met.

6. The data updating system according to claim 1, wherein the shared data control module includes a user notification unit for giving one of permissions to the user terminal from permissions classified by strengths, and selecting information which is transmitted to the user terminal based on the permission.

7. The data updating system according to claim 6, wherein the user notification unit transmits an update log of the shared data only to a user terminal having a permission of a certain strength.

8. The data updating system according to claim 6, wherein the user notification unit transmits a content of the data updating request received from the user terminals only to a user terminal having a permission of a certain strength.

9. The data updating system according to claim 1, wherein the shared data control module includes a user notification unit for notifying the shared data to the user terminal when the shared data is updated.

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10. The data updating system according to claim 9, wherein the user notification unit includes at least a differential data between the shared data before updating and after updating in a content of the notification.

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11. The data updating system according to claim 9, wherein the user notification unit notifies to a user terminal that has accessed the shared data before updating the shared data.

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12. The data updating system according to claim 9, wherein the user notification unit notifies to a user terminal that has accessed the shared data within a pre-determined period before updating the shared data.

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13. The data updating system according to claim 1, wherein the user terminal transmits an information transmission request to the server, and wherein the shared data control module includes a user notification unit for receiving the information transmission request from the user terminal, checking an access log, and responding to the information

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transmission request if the user terminal has accessed the shared data before receiving the information transmission request.

5 14. The data updating system according to claim 13, wherein the user notification unit responds to the information transmission request if the user terminal has accessed the shared data within the pre-determined period before receiving the information transmission request.

10 15. The data updating system according to claim 13, wherein the information transmission request from the user terminal is a transmission request of the content of the data updating request already arrived to the server before a shared data
15 updating process.

16. The data updating system according to claim 1, wherein the user terminal transmits a condition for monitoring the shared data updating;

20 wherein the shared data control module includes a user notification unit for registering a transmitted condition, and notifying the shared data updating to the user terminal when the condition is met at the shared data updating.

25 17. The data updating system according to claim 5, wherein

the user terminal transmits a condition for monitoring the shared data updating;

wherein the shared data control module includes a user notification unit for registering the transmitted condition, and notifying to the user terminal that the shared data updating predicting value meets the condition when the shared data updating predicting value meets the condition.

18. The data updating system according to claim 1, wherein the clock module includes an encryption unit.

19. The data updating system according to claim 1, wherein the clock module includes a user terminal authentication function.

20. The data updating system according to claim 1, wherein the server includes a memory unit for storing a shared data updating request queue, and arranging the shared data update request received from the user terminal by the shared data control module in an order of the data update request issuance time.

21. A data updating method for a computer systems having a plurality of user terminals, and a server for controlling the shared data among the users, wherein the plurality of

user terminals and the server respectively have clock modules for keeping a time, the data updating method comprising the steps of:

5 synchronizing a time between the clock modules of a plurality of user terminals and the clock module of the server;

10 by the user terminal, attaching a time obtained from the clock module as a data update request issuance time to a shared data update request when requesting a shared data update, and transmitting the shared data update request to the server, and repeatedly transmitting the shared data update request in keeping the data update request issuance time unchanged until the shared data update request is received at the server; and

15 by the server, receiving the shared data update request from the user terminal and deciding the updating order of the shared data based on an attached data update request issuance time attached to the shared data update request received.

20 22. The data updating method according to claim 21, wherein the shared data update request is one of a selling order and a buying order which includes a first condition and a quantity, wherein the shared data update request is stored in a memory unit of the server in a format of shared data update request

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queue in an order of the data update request issuance time,
wherein the data updating method comprises the steps of:

a) checking by executing one of the steps of (a1) to (a3),
depending on a state of the shared data updating request queue
stored in the memory unit of the server;

a1) completing the data updating process when neither
the selling order nor the buying order is stored in the shared
data update request queue stored in the memory unit of the
server;

a2) taking the buying order as a main order and taking
the selling order as a dealing order when a top of the shared
data update request queue stored in the memory unit of the
server is the buying order, and advancing to a first condition
comparing step (b); and

a3) taking the selling order as a main order and the
buying order as a dealing order when a top of the shared data
updating request queue stored in the memory unit of the server
is the selling order, and advancing to the first condition
comparing step (b); and

b) comparing the first condition by reading the dealing
order in an order from the shared data updating request queue
stored in the memory unit of the server, and executing one
of the steps depending on an availability of a dealing order
that matches in the first condition with the main order;

b1) if there is no matching in first condition, deleting

the main order from the shared data update request queue as a non-established main order and returning to the checking step (a);

b2) if the first condition matches, comparing the buying quantity and the selling quantity, and executing one of the following steps based on a result of comparing;

b21) if the buying quantity is exceeding the selling quantity, non-establishing the buying order and the selling order, and reading a next dealing order from the shared data update request queue, and returning to the first condition comparing step;

b22) if the buying quantity is same with the selling quantity, establishing the buying order and the selling order, deleting the buying order and the selling order from the shared data update request queue, and returning to the checking step (a); and

b23) if the selling quantity exceeds the buying quantity, establishing the selling order and the buying order, deleting the buying order from the shared data update request queue, and replacing selling quantity to an exceeding buying quantity, updating and storing the queue data of the selling order, and returning to the checking step (a).